

## CLAIMS

1. A reduced-wear sealing element (10, 30, 40, 50, 60), characterised in that it is made at least in part from a self-lubricating plastics material comprising a wear-resistant polymer matrix (11), in which are dispersed microcapsules (12) containing a lubricating agent.
2. A sealing element (10, 30, 40, 50, 60) according to claim 1, characterised in that said polymer matrix (11) comprises a polyketone.
3. A sealing element (10, 30, 40, 50, 60) according to claim 2, characterised in that said polyketone is an aromatic polyketone.
4. A sealing element (10, 30, 40, 50, 60) according to claim 3, characterised in that said aromatic polyketone is polyetherether ketone (PEEK).
5. A sealing element (10, 30, 40, 50, 60) according to claim 1, characterised in that said polymer matrix (11) comprises a resin selected from among polybutadiene-styrene (PBS), polytetrafluoroethylene (PTFE) and blends thereof.
6. A sealing element (10, 30, 40, 50, 60) according to any one of the preceding claims 1-5, characterised in that said microcapsules (12) comprise a shell of

polyoxymethylene urea (PMU).

7. A sealing element (10, 30, 40, 50, 60) according to any one of the preceding claims 1-6, characterised in that said microcapsules (12) have an average diameter of  
5 between 5 and 500  $\mu$ .

8. A sealing element (10, 30, 40, 50, 60) according to any one of the preceding claims 1-7, characterised in that said microcapsules (12) are dispersed in said polymer matrix (11) in a ratio by weight of between 2  
10 and 30 wt.%.

9. A sealing element (10, 30, 40, 50, 60) according to any one of the preceding claims 1-8, characterised in that said lubricant incorporated in the microcapsules (12) is an oil which is low in acidity.

15 10. A sealing element (10, 30, 40, 50, 60) according to any one of the preceding claims 1-9, characterised in that said lubricant is a fluid lubricant which has a viscosity within the range between 20 and 250 cSt.

11. A sealing element (10, 30, 40, 50, 60) according to  
20 any one of the preceding claims 1-10, characterised in that said lubricant further comprises an additive or filler to increase mechanical strength or thermal conductivity.

12. A sealing element (10, 30, 40, 50, 60) according to

claim 11, characterised in that said additive is a microelement selected from the group consisting of zinc, boron and mixtures thereof.

13. A sealing element (10, 30, 40, 50, 60) according to  
5 any one of the preceding claims 1-12, characterised in that it is a sealing ring (30, 40) for a piston (21) or cylinder of a reciprocating compressor.

14. A sealing element (10, 30, 40, 50, 60) according to  
10 any one of claims 1-12, characterised in that it is a guide ring (50) for a piston (21) or cylinder of a reciprocating compressor.

15. A sealing element (10, 30, 40, 50, 60) according to  
15 any one of claims 1-12, characterised in that it is a packing ring (60) for a shaft (22) of a piston (21) of a reciprocating compressor.

16. A sealing element (10, 30, 40, 50, 60) according to  
20 claim 13, characterised in that said sealing ring (30, 40) is accommodated in a circumferential seat (26) provided in the side of a piston (21) of a reciprocating compressor.

17. A sealing element (10, 30, 40, 50, 60) according to  
claim 14, characterised in that said guide ring (50) has grooves (52) and is accommodated in a circumferential seat (26) provided in the side of a piston (21) of a

reciprocating compressor.

18. A sealing element (10, 30, 40, 50, 60) according to claim 16, characterised in that said sealing ring (30, 40) has at least one through cut (32, 42), inclined  
5 relative to the axis of the ring (30, 40).